Amendments to the Claims

1. (currently amended) In a communications system comprising a plurality of cells, each cell having a base station and a plurality of mobile stations, a method of scheduling packet transmission comprising:

a) determining a nominal power level for all base stations in the system;

b) determining an average effective data rate for all mobile stations in the system;

c) using the nominal power level and average effective data rate to determine a tentative transmission schedule for each of the plurality of mobile stations in the system;

d) determining an actual power value for each of the plurality of mobile stations in a particular cell;

e) determining an actual effective data rate for each of the plurality of mobile stations in the cell;

f) determining a present credit value for each of the plurality of mobile stations in the cell;

g) determining which mobile station of the plurality of mobile stations has a lowest amount of normalized bytes transmitted, wherein normalized bytes transmitted is calculated as a function of the present credit value for each of the plurality of mobile stations in the cell; and

h) scheduling for transmission, the mobile station with the lowest amount of normalized bytes transmitted.

2. (cancelled)

3. (previously presented): The method of claim 1 wherein step b) comprises the steps of:

i) approximating a signal to interference plus noise ratio (SINR) for each of the plurality of mobile stations in the system;

ii) using the SINR to determine at least one of a modulation and coding scheme, a spreading factor and an effective data rate for each of the plurality of mobile stations in the system; and

iii) using the effective data rate to determine the average effective data rate for all mobile stations in the system.

4. (previously presented): The method of claim 3 wherein the step of approximating the SINR comprises using the nominal power level, a present gain, a present interference channel gain and receiver noise power plus unaccounted interference terms.

5. (previously presented): The method of claim 4 wherein the present gain, the present interference channel gain and receiver noise power plus unaccounted interference terms are obtained by polling transceivers at each of the plurality of mobile stations and the base station for a measurement report.

6. (original): The method of claim 3 wherein the step of approximating the SINR comprises obtaining the SINR from a measurement report.

7. (original): The method of claim 3 wherein step ii) comprises using a plot of signal to interference plus noise ratio vs. FER to determine the modulation and coding scheme.

8. (original): The method of claim 7 further comprising using a plot of signal to interference plus noise ratio vs. effective data rate and the modulation and coding scheme to determine the effective data rate for each mobile station in the system.

9. (previously presented): The method of claim 1 wherein step c) further comprises using the average effective data rate to determine a planned fraction of frames to be used by each of the plurality of mobile stations in the system.

10. – 12. (cancelled)

13. (previously presented): The method of claim 1 wherein step d) comprises using the nominal power level and present values of gain and interference terms in a power control algorithm to determine the actual power value.

14. (previously presented): The method of claim 1 wherein step e) comprises using the nominal power level and present values of gain and interference terms in a link data rate adaptation algorithm to determine the actual effective data rate.

15. (previously presented): The method of claim 1 wherein step f) comprises using the actual effective date rate, the average effective data rate and a quality of service of each mobile station of the plurality of mobile stations in the cell to compute the present credit value of each of the plurality of mobile stations.

16. (previously presented): The method of claim 1 further comprising the step of updating the amount of normalized bytes for each mobile station in the cell.

17. – 20. (cancelled)

21. (previously presented): The method of claim 1 further comprising the steps of:

i) when system resources have not been exhausted, scheduling for transmission, the mobile station with a next lowest amount of normalized bytes transmitted; and

j) repeating step i) until system resources are exhausted.

22. (previously presented): The method of claim 1 wherein the average effective data rate in step b) is defined as $\hat{R}_{j,avg}^{new}$ and is calculated as $\hat{R}_{j,avg}^{new} = (1-\tau)\cdot\hat{R}_{j,avg}^{old} + \tau\cdot\hat{R}_j$, wherein τ is an exponential filter coefficient and

$\tau(0 \le \tau \le 1)$, $\hat{R}_j$ is a present actual effective date rate and $\hat{R}_{j,avg}^{old}$ is a previous average effective data rate.

23. (previously presented): The method of claim 1 wherein the present credit value in step f) is defined as C_j and is calculated as $C_j = w_j \hat{R}_{j,avg}^{\beta} \left(\frac{\hat{R}_j}{\hat{R}_{j,avg}} \right)^{\gamma}$, wherein w_j is a QoS weight, $\hat{R}_{j,avg}$ is an average effective date rate, $\hat{R}_j$ is a present actual effective date rate, β is a first fairness parameter and γ is a second fairness parameter.

24. (previously presented): The method of claim 1, wherein step g) comprises:

for the plurality of mobile stations, determining an amount of normalized bytes to transmit at a beginning of a scheduling interval by

updating a quantity $\overline{W}_j$ a first time using

$$\overline{W}_j = \overline{W}_j + \phi \cdot \frac{number\ of\ bytes\ transmitted_j}{C_j};$$

updating quantity $\overline{W}_j$ a second time using $\overline{W}_j = (1-\phi) \cdot \overline{W}_j$;

calculating the normalized bytes to transmit as $\overline{W}_j$; and

sorting the normalized bytes, $\overline{W}_j$, to determine which mobile station of the plurality of mobile stations has the lowest amount of normalized bytes transmitted;

wherein ϕ is a discount factor and C_j is the present credit value.

25. (previously presented): The method of claim 1 wherein the present credit value in step f) is defined as C_j and is calculated as $C_j = w_j \hat{R}_{j,avg}^{\beta}$, wherein w_j is a QoS weight, $\hat{R}_{j,avg}$ is an average effective date rate, and β is a fairness parameter.

26. (previously presented): The method of claim 1, wherein step g) comprises:

for the plurality of mobile stations, determining an amount of normalized bytes to transmit at a beginning of a scheduling interval by

updating a quantity $\overline{W}_j$ a first time using

$$\overline{W}_j = \overline{W}_j + \phi \cdot \frac{number\ of\ bytes\ transmitted_j}{C_j}$$

updating quantity $\overline{W}_j$ a second time using $\overline{W}_j = (1-\phi) \cdot \overline{W}_j$;

calculating the normalized bytes to transmit as $\overline{W}_j \left(\frac{\hat{R}_{j,avg}}{\hat{R}_j} \right)^{\gamma}$; and

sorting the normalized bytes to determine which mobile station of the plurality of mobile stations has the lowest amount of normalized bytes transmitted

wherein ϕ is a discount factor, C_j is the present credit value, $\hat{R}_{j,avg}$ is an average effective date rate, $\hat{R}_j$ is a present actual effective date rate and γ is a fairness parameter.